

Assessment Schedule – 2009**Biology: Describe the transfer of genetic information (90163)****Evidence Statement**

	Achievement	Achievement with Merit	Achievement with Excellence
ONE	<p>Describes the inheritance of cat hair length in relation to cat 7.</p> <p>Eg:</p> <ul style="list-style-type: none"> • Long hair is recessive. • Short hair is dominant. • Cat 7 is heterozygous / Hh. • Cat 7 is short-haired. • Parents (3 and 4) both heterozygous. • Correct annotated Punnett square for cross between 3 and 4. • Correct annotated Punnett square for cross between 6 and 7. <p>Must have FOUR ideas.</p>	<p>Explains the genotype of cat 7 in terms of either dominance or heterozygosity.</p> <p>Eg:</p> <p>Long hair must be a recessive characteristic because parents 3 and 4 were short-haired, but were able to produce a long-haired offspring. This is because they were heterozygous and the allele for long hair was masked.</p> <p>OR</p> <p>Cat 7 must be heterozygous because it was able to produce a long-haired offspring with a long-haired cat.</p>	<p>Discussion links parental genotype and F2 genotypes to justify Cat 7 being heterozygous.</p> <p>Eg:</p> <p>Long hair must be a recessive characteristic because parents 3 and 4 were short-haired, but were able to produce a long-haired offspring. This is because they were heterozygous and the allele for long hair was masked. Cat 7 must be heterozygous because it was able to produce a long-haired offspring with a long-haired cat.</p>
TWO	<p>Describes how sexual OR asexual reproduction can be used to produce variation or not.</p> <p>Eg:</p> <ul style="list-style-type: none"> • Sexual reproduction leads to variation. • Asexual reproduction does not lead to variation / produces identical offspring / produces clones. • Plants produced by sexual reproduction have DNA / genetic material from two sources mixed. • Plants produced by asexual reproduction have DNA just from the parent plant. • Sexual reproduction involves gametes produced by meiosis, to create variation. • Asexual reproduction involves just mitosis, so there is no variation. <p>ONE idea needed.</p>	<p>Explains BOTH sexual AND asexual reproduction, in terms of the presence / absence of variation in offspring.</p> <p>Eg:</p> <p>Asexual reproduction does not lead to variation in the offspring, as there is no mixing of genetic material. The offspring are produced by mitosis, so are identical to the parent. Sexual reproduction leads to variation, as the DNA of two parent plants is combined during fertilisation. This means that the offspring produced are different from both parents.</p>	<p>Discussion links the presence of variation to sexual reproduction and meiosis AND absence of variation to asexual reproduction and mitosis in the offspring to the applications in the question.</p> <p>Eg:</p> <p>Sexual reproduction leads to variation. Meiosis produces the gametes, and then the DNA of two parent plants (gametes) is combined during fertilisation. This means that the offspring produced are different from both parents. The breeder used this technique to make the new variety, as they wanted to make plants with different characteristics to the parent. Asexual reproduction does not lead to variation in the offspring, as there is no mixing of genetic material. The offspring are produced by mitosis, so are identical to the parent. The breeder used this technique to make copies of the new variety because they could guarantee that the copies would have the same genetic information as the parent plant, and therefore exactly the same characteristics.</p>

THREE	<p>Describes the steps in replication. OR Describes the significance of accuracy.</p> <p>Eg:</p> <ul style="list-style-type: none"> • The new strand of DNA is complementary. • A–T; G–C. • The original strands unzip and new complementary bases / nucleotides are added on to the original bases. • DNA has to be accurately copied to ensure that the daughter cells created have the same DNA as the parent cell. 	<p>Describes the steps in replication AND explains how the complementary nature of the two strands of DNA ensures accuracy during replication.</p> <p>Eg:</p> <p>The original strands unzip and new bases / nucleotides are added on to the original bases. The bases of the old and new strand are complementary to each other. A–T and G–C. This ensures that the new strand is an exact copy of the old strand.</p>	<p>Explains how the complementary nature of the two strands of DNA ensures accuracy during replication AND discusses the significance of this.</p> <p>Eg:</p> <p>The original strands unzip and new bases / nucleotides are added on to the original bases. The bases of the old and new strand are complementary to each other. A–T and G–C. This ensures that the new strand is an exact copy of the old strand. DNA has to be accurately copied to ensure that the daughter cells created have the same DNA as the parent cell, (so that they function in the same way) / to ensure than mutations do not occur.</p>
-------	---	--	---

Judgement Statement

Achievement	Achievement with Merit	Achievement with Excellence
3 A	3 M	3 E